

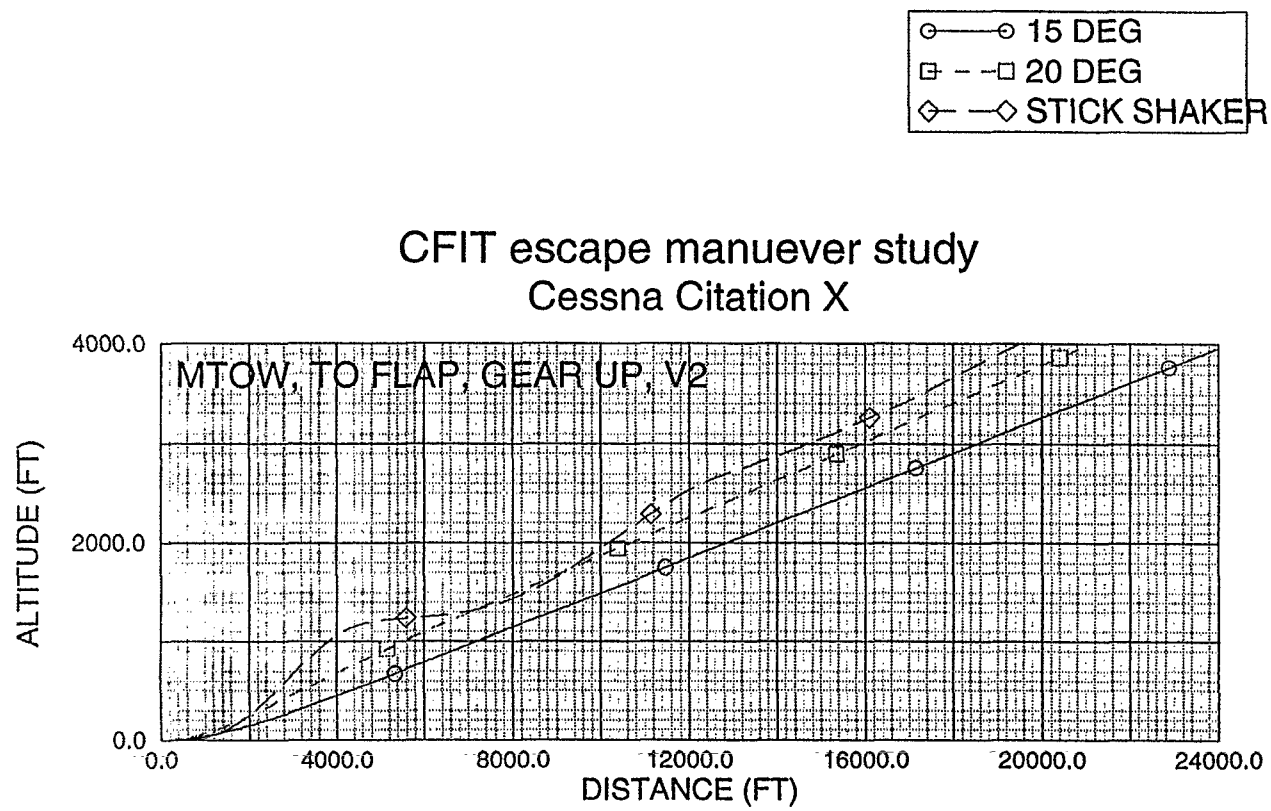


Cessna used an engineering simulation of the Citation X to examine three different escape strategies for four flight conditions. The flight conditions were:

1. takeoff, sea level, max. take off weight, 15 deg flap, gear up, V_2
2. takeoff, 10000 ft
3. landing, sea level, max. landing weight, 35 deg flap, gear down, $V_{ref} + 5$ kt
4. maneuvering, sea level, flap and gear up, V_a

The three escape maneuvers used the same pitch rotation rate of about 3 deg/sec, with the throttles set to takeoff thrust 0.5 sec after initiating a pullup. Rotation was continued to either 15 deg., 20 deg., or stick shaker onset.

The time histories of altitude gained vs. distance for the Citation X simulation show that rotating to 20 deg. pitch attitude is always better than 15 deg. Rotating to stick shaker onset produces more altitude gain initially in all cases, but altitude falls slightly below the 20 deg. case. at some distance downrange for the takeoff flight conditions. Thus, we would recommend always rotating to 20 deg., and continuing to rotate to stick shaker onset if the GPWS warning continues.



CFIT Escape maneuver study Cessna Citation X

